

HISTORY KEPT YES <input checked="" type="checkbox"/> NO <input type="checkbox"/>		ILLINOIS HIGHWAY INFORMATION SYSTEM STRUCTURE INFORMATION AND PROCEDURE MANUAL	
NBIS REQUIRED YES <input checked="" type="checkbox"/> NO <input type="checkbox"/>		ITEM NAME DECK CONDITION	ITEM NO. 58 PAGE 1 of 5 EFF. DATE 07/01/02
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RESPONSIBLE FOR UPDATE	District Local Roads	District Maintenance / Operations	
STRUCTURES	Local	State	
UPDATE SCREENS	(12) Inspection / Appraisals	(2) Inspection	
INQUIRY SCREENS	(4) Inspection / Appraisals	(2) Inspection 1 of 2	

DESCRIPTION AND PURPOSE OF ITEM

This item describes the overall condition rating of the Deck.

Concrete decks should be inspected for cracking, scaling, spalling, leaching, chloride contamination, potholing, delamination, and full or partial depth failures. Aggregate pop-outs on bare concrete decks should be considered primarily as a wearing surface and riding quality problem with only a minor effect on the Deck Condition Rating. Steel grid decks should be inspected for broken welds or grids, section loss, and growth of filled grids from corrosion. Timber decks should be inspected for splitting, crushing, fastener failure, and deterioration from rot.

While the condition of decks is normally based on a visual evaluation, evaluation techniques typically associated with detailed bridge condition reports such as concrete cores, electrical half-cells, etc. may be used at the discretion of the inspection agency. Interpretation of test results should be by properly qualified individuals and applied to the deck condition accordingly.

The condition evaluation should be primarily based on the appearance of the underside of the deck (deck soffit). The condition of the wearing surface, parapets / bridge railings, curbs, median, sidewalks, drain system, light standards and expansion joints may be recorded on the inspection form (refer to Appendix E, Form BBS-BIR-1) using the rating scales described under "Element Ratings - General" (Item No. Composite, Page 1 of 1, prior to Item 58). These ratings should not be considered in the overall deck condition.

On bridges where the deck is integral with the superstructure, the superstructure and deck condition ratings may be affected by one another. It should be noted, however, that the superstructure condition rating differs from the deck condition rating in that it is more related to the ability to carry overall vehicular loading rather than the individual wheel loads for which the deck is designed. For example, an integral deck may have instances of full depth failures which have little or no affect on the ability of the superstructure to perform its function.

Needed repairs should be recorded on designated forms and reported to appropriate personnel in accordance with the policies of the maintaining agency.

History is retained for this item based on each Inspection Date - Item 90.

**ILLINOIS HIGHWAY INFORMATION SYSTEM
STRUCTURE INFORMATION AND PROCEDURE MANUAL**

ITEM NAME **DECK CONDITION**

ITEM NO.	58
PAGE	2 of 5
EFF. DATE	07/01/02

CODE AND SCREEN ENTRY INSTRUCTIONS

A one-digit field.

Rate and code the structure's condition in accordance with the "Condition Ratings - General" described on the preceding pages (Item No. 58-62 discussion, pages 1 of 2 and 2 of 2).

The Condition Rating Guides for Specific Deck Types on the following pages (pages 3 of 5 through 5 of 5) are intended only to provide some assistance in recognizing typical kinds of deck deficiencies and relating them to an appropriate Deck Condition Rating.

All Deck Types will use the same coding guidelines as described below for deck rating codes of N, 9, 1, and 0 (zero).

FOR ALL DECK MATERIAL TYPES

CONDITION RATING GUIDES FOR CODES N, 9, 1 AND 0

<u>Code</u>	<u>Description</u>
N	Culvert.
9	New deck.
1	Deck in "imminent failure" condition requiring bridge closure or temporary measures to allow structure to remain open.
0	Deck that has failed and is beyond repair, requiring bridge closure.

Condition Rating Guides for codes 2 through 8 pertaining to specific deck material types are described on the following pages.

ILLINOIS HIGHWAY INFORMATION SYSTEM

STRUCTURE INFORMATION AND PROCEDURE MANUAL

ITEM NAME DECK CONDITION	ITEM NO. 58
	PAGE 3 of 5
	EFF. DATE 07/01/02

CONDITION RATING GUIDES FOR SPECIFIC DECK MATERIALS

CONCRETE BRIDGE DECKS

Code	Description
8	VERY GOOD. Minor cracks may be present but no spalling, scaling, pop-outs or delamination. If tested, electrical potential is less than 0.35 and chloride content less than 2.0 pounds per cubic yard.
7	GOOD. Some cracks, light scaling (less than 1/4" depth) or pop-outs may be present. If tested, up to 10% of the deck may be chloride contaminated (i.e. - electrical potential greater than 0.35 or chloride content greater than 2.0 lb/yd ³). No more than 1% of the deck may be spalled..
6	SATISFACTORY. Open cracks may have occurred at ≥ 5 foot intervals over a majority of the deck soffit. Spalls, delaminations and scaling may be present on up to 10% of the deck riding surface or soffit area. Up to 10% of the deck soffit may be map cracked or continuously wet. If tested, up to 20% of the deck may be chloride contaminated. No full depth failures.
5	FAIR. Spalls, delaminations and scaling may be present on up to 25% of the deck surface or soffit area. Up to 25% of the deck soffit may be map cracked or continuously wet. If tested, up to 40% of the deck area may be chloride contaminated. Cracks, typically with leaching, may have occurred in the deck soffit spaced at < 5 feet. Full depth failures could be present but do not affect traffic.
4	POOR. Spalls, delaminations and scaling, may be present in over 25% of the deck surface or soffit area. Over 25% of the deck soffit may be map cracked or continuously wet. If tested, over 40% of the deck area is chloride contaminated. Full depth failures present or imminent.
3	SERIOUS. Condition is similar to the description for a condition rating of "4", though more extensive. Full depth failures are in evidence to the point that wheel loads must be restricted, or temporary measures implemented, due to the danger to traffic or of the possibility of additional failures being caused by heavy wheel loads.
2	CRITICAL. Full depth failures over much of the deck which require frequent Special Inspections to keep the bridge open because of the possibility of sudden deck failure. Temporary measures may be needed to allow continued use of the structure.

NOTE: For codes N, 9, 1 and 0 (zero) Condition Rating Guides pertaining to all deck material types, refer to Item No. 58, Page 2 of 5.

**ILLINOIS HIGHWAY INFORMATION SYSTEM
STRUCTURE INFORMATION AND PROCEDURE MANUAL**

ITEM NAME DECK CONDITION	ITEM NO. 58	
	PAGE 4 of 5	
	EFF. DATE	07/01/02

CONDITION RATING GUIDES FOR SPECIFIC DECK MATERIALS

STEEL BRIDGE DECK

<u>Code</u>	<u>Description</u>
8	VERY GOOD. Tightly secured to floor system with no rust.
7	GOOD. Loose at some connections with minor rusting. A few cracked welds and/or broken grids.
6	SATISFACTORY. Considerable rusting with indications of initial section loss. Loose at many locations. Some cracked welds and/or broken grids.
5	FAIR. Heavy rusting with areas of section loss. Loose at numerous locations. Numerous cracked welds and/or broken grids. Grid sections may be uplifting in isolated areas.
4	POOR. Heavy rusting resulting in considerable section loss and some holes through deck. Many welds cracked and/or grids broken. Uplifting of grid sections may be occurring throughout deck.
3	SERIOUS. Severe or critical signs of structural distress are visible to the point where load limits will have to be posted.
2	CRITICAL. Same as condition rating of "3" but a reduced interval Special Inspection required to allow bridge to remain open.

NOTE: For codes N, 9, 1 and 0 (zero) Condition Rating Guides pertinent to all deck material types, refer to Item No. 58, Page 2 of 5.

ILLINOIS HIGHWAY INFORMATION SYSTEM

STRUCTURE INFORMATION AND PROCEDURE MANUAL

ITEM NAME DECK CONDITION	ITEM NO. 58	
	PAGE 5 of 5	
	EFF. DATE	07/01/02

CONDITION RATING GUIDES FOR SPECIFIC DECK MATERIALS

TIMBER BRIDGE DECK

<u>Code</u>	<u>Description</u>
8	VERY GOOD. No crushing, rotting, or splitting. Tightly secured to floor system.
7	GOOD. Minor cracking, checking or splitting with a few loose planks.
6	SATISFACTORY. A minor number of rotted or crushed planks in need of replacement. Many planks cracked or split. Many loose planks. Fire damage limited to surface scorching with insignificant section loss. Some wet areas noted.
5	FAIR. Numerous planks cracked, split, rotted, or crushed and in need of replacement though overall capacity of deck for wheel loads is not affected. Many planks may be loose. Fire damage limited to surface charring with minor section loss. A few wet areas with sufficient water present to support fungus growth.
4	POOR. Majority of the planks are rotted, crushed, and/or split, necessitating replacement of the entire deck. Fire damage may be present, with section loss that has reduced the load carrying capacity of the deck. Many wet areas with possibly green leafy growth growing from or directly on the deck.
3	SERIOUS. Severe signs of structural distress are visible to the point where load limits will have to be posted. Major fire damage which will substantially reduce the load carrying capacity of the member.
2	CRITICAL. Advanced deterioration with partial deck failure to the point where a Special Inspection at reduced intervals is necessary to allow the structure to remain open.

NOTE: For codes N, 9, 1 and 0 (zero) Condition Rating Guides pertinent to all deck material types, refer to Item No. 58, Page 2 of 5.